





2007-09

# The effect of moral waivers on the success of Navy recruits

Huth, Richard A.

Monterey, California. Naval Postgraduate School




# NAVAL POSTGRADUATE SCHOOL

**MONTEREY, CALIFORNIA**

# THESIS

**THE EFFECT OF MORAL WAIVERS ON THE SUCCESS OF NAVY RECRUITS**

by

Richard A. Huth

September 2007

| | |
|---|---|
| Thesis Advisor: | Samuel E. Buttrey |
| Second Reader: | David L. Schiffman |

**Approved for public release; distribution is unlimited.**

THIS PAGE INTENTIONALLY LEFT BLANK

| REPORT DOCUMENTATION PAGE | | Form Approved OMB No. 0704-0188 |
|---|---|---|



| 1. AGENCY USE ONLY *(Leave blank)* | 2. REPORT DATE | 3. REPORT TYPE AND DATES COVERED |
|---|---|---|
| | September 2007 | Master's Thesis |

| 4. TITLE AND SUBTITLE The Effect of Moral Waivers on the Success of Navy Recruits | 5. FUNDING NUMBERS |
|---|---|
| 6. AUTHOR(S) Richard A. Huth | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>Naval Postgraduate School<br>Monterey, CA 93943-5000 | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)<br>Commander, Navy Recruiting Command<br>5722 Integrity Drive, Bldg 784, Millington, TN 38054 | 10. SPONSORING/MONITORING AGENCY REPORT NUMBER |

**11. SUPPLEMENTARY NOTES** The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

| 12a. DISTRIBUTION / AVAILABILITY STATEMENT | 12b. DISTRIBUTION CODE |
|---|---|
| Approved for public release; distribution is unlimited. | A |

**13. ABSTRACT (maximum 200 words)**

This study examines the Navy's enlisted screening process and identifies success predictors through the analysis of moral waiver and attrition data for a two-year cohort (Calendar Years 2003 and 2004) compiled from three sources: (1) Personnel Recruiting for Immediate and Delayed Enlistments (PRIDE), (2) Military Entrance Processing Command (MEPCOM) Integrated Reporting System (MIRS), and (3) Navy Recruiting District (NRD) Nashville, Tennessee. Data comparisons were performed to measure the quality of existing waiver data. Historical success rates were then compared against moral waiver status, and logistic regression models were constructed to predict (1) the long-term success of applicants from the beginning of the Delayed Entry Program (DEP) through first term and (2) the success of sailors from the time they enter active duty. The data comparisons showed that MIRS recorded more waivers than PRIDE and that Nashville recorded more waivers than either MIRS or PRIDE. Results also showed that those with moral waivers were actually more successful at completing DEP than those who enlisted without moral waivers. However, it was shown that those who required moral waivers were not as successful in the long term and were significantly more likely to be moral-related losses from active duty than those without moral waivers. Regression analysis showed that moral waivers are negative predictors of long-term success.

| 14. SUBJECT TERMS | 15. NUMBER OF PAGES |
|---|---|
| moral waivers, civil waivers, attrition, success, recruiting, waiver codes, Delayed Entry Program (DEP) | 75 |
| | 16. PRICE CODE |

| 17. SECURITY CLASSIFICATION OF REPORT | 18. SECURITY CLASSIFICATION OF THIS PAGE | 19. SECURITY CLASSIFICATION OF ABSTRACT | 20. LIMITATION OF ABSTRACT |
|---|---|---|---|
| Unclassified | Unclassified | Unclassified | UU |

NSN 7540-01-280-5500 Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

THIS PAGE INTENTIONALLY LEFT BLANK

**Approved for public release; distribution is unlimited.**

# THE EFFECT OF MORAL WAIVERS ON THE SUCCESS OF NAVY RECRUITS

Richard A. Huth
Lieutenant, United States Navy
B.S., Vanderbilt University, 1998

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF SCIENCE IN OPERATIONS RESEARCH**

from the

**NAVAL POSTGRADUATE SCHOOL**
**September 2007**

Author: Richard A. Huth

Approved by: Samuel E. Buttrey
Thesis Advisor

David L. Schiffman
Second Reader

James N. Eagle
Chairman, Department of Operations Research

THIS PAGE INTENTIONALLY LEFT BLANK

# ABSTRACT

This study examines the Navy's enlisted screening process and identifies success predictors through the analysis of moral waiver and attrition data for a two-year cohort (Calendar Years 2003 and 2004) compiled from three sources: (1) Personnel Recruiting for Immediate and Delayed Enlistments (PRIDE), (2) Military Entrance Processing Command (MEPCOM) Integrated Reporting System (MIRS), and (3) Navy Recruiting District (NRD) Nashville, Tennessee. Data comparisons were performed to measure the quality of existing waiver data. Historical success rates were then compared against moral waiver status, and logistic regression models were constructed to predict (1) the long-term success of applicants from the beginning of the Delayed Entry Program (DEP) through first term and (2) the success of sailors from the time they enter active duty. The data comparisons showed that MIRS recorded more waivers than PRIDE and that Nashville recorded more waivers than either MIRS or PRIDE. Results also showed that those with moral waivers were actually more successful at completing DEP than those who enlisted without moral waivers. However, it was shown that those who required moral waivers were not as successful in the long term and were significantly more likely to be moral-related losses from active duty than those without moral waivers. Regression analysis showed that moral waivers are negative predictors of long-term success.

THIS PAGE INTENTIONALLY LEFT BLANK

# TABLE OF CONTENTS

# LIST OF FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

# LIST OF TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

# LIST OF ACRONYMS

| | |
|---|---|
| **2YO** | Two Year Obligor General Details |
| **5YO** | Five Year Obligor |
| **AEF** | Advanced Electronics Field |
| **AFQT** | Armed Forces Qualification Test |
| **ATF** | Advanced Technical Field |
| **AWOL** | Absence Without Leave |
| **BEERS** | Basic Enlistments Eligibility Requirements |
| **BTW** | Behind-the-Wheel |
| **CNRC** | Commander, Navy Recruiting Command |
| **CO** | Commanding Officer |
| **CSM** | Compensatory Screening Model |
| **CY** | Calendar Year |
| **DEP** | Delayed Entry Program |
| **DMDC** | Defense Manpower Data Center |
| **DoD** | Department of Defense |
| **EPSQ** | Electronic Personnel Security Questionnaire |
| **FY** | Fiscal Year |
| **GAO** | Government Accounting Office |
| **GTEP** | GENDET Targeted Enlistment Program |
| **HP3** | High Performance Predictor Profile |
| **ISC** | Interservice Separation Code |
| **JOBS** | Job Oriented Basic Skills |
| **MEPCOM** | Military Entrance Processing Command |
| **MEPS** | Military Entrance Processing Station |
| **MIRS** | MEPCOM Integrated Reporting System |
| **NCSA** | National Call to Service |
| **NF** | Nuclear Field |
| **NIDT** | Non-Instrumented Drug Test |

| | |
|---|---|
| **NPS** | Naval Postgraduate School |
| **NPSB** | Non-Prior Service Basic |
| **NRD** | Navy Recruiting District |
| **OR** | Operations Research |
| **PRIDE** | Personnel Recruiting for Immediate and Delayed Enlistments |
| **RTC** | Recruit Training Command |
| **SEAL** | Special operations |
| **SECNAV** | Secretary of the Navy |
| **SF** | Subfarer |
| **SG** | School Guarantee |
| **SSN** | Social Security Number |
| **TAR** | Non-Prior Service Basic and Training and Administration of the Reserve |
| **TEP** | TAR Enlistment Program |
| **UIC** | Unit Identification Code |

# ACKNOWLEDGMENTS

The author would like to acknowledge the sponsorship and guidance provided by Navy Recruiting Command. Mr. John Noble, Head of Research, was instrumental in making an experience tour possible.

THIS PAGE INTENTIONALLY LEFT BLANK

# EXECUTIVE SUMMARY

The objective of this study was to investigate the relationship between moral waivers and long-term success of Navy applicants. The issue of waivers continues to be high-profile, as Navy leaders seek to minimize disciplinary problems in the fleet that may be linked to pre-enlistment behavior of sailors. In order to support analysis, Navy Recruiting Command provided waiver and demographic information from its databases for a two-year cohort (Calendar Years 2003 and 2004), and Defense Manpower Data Center provided loss dates and codes as well as its waiver records up to May 2007. The resulting dataset contained 99,375 records. Finally, in order to provide a third data source for comparison, Navy Recruiting District Nashville provided its internal waiver logbook, which was transcribed and merged with the other two sources.

Extensive data comparisons were conducted in order to measure the quality of the waiver data. To alleviate data entry bias, the concept of "highest" waiver was established so that each applicant was counted throughout the study only for his or her highest-level civil waiver. Additionally, if an applicant had one civil, alcohol abuse, or drug-related waiver from any one of the three sources, then a flag was set to indicate that the applicant had received a moral waiver. The data comparisons showed that MIRS recorded more waivers than PRIDE and that Nashville recorded more waivers than either MIRS or PRIDE. Surprisingly, it was found that those with moral waivers were actually more successful at completing DEP than those who enlisted without moral waivers. It was shown, however, that those who required moral waivers were not as successful in the long term, and population proportion tests showed that those with moral waivers were significantly more likely to be moral-related "losses" from active duty than those without moral waivers.

Long-term success was defined in this study as those who completed DEP and continued on active duty until May 2007 (completed contracts and officer programs accounted for). To test the actual significance of moral waivers

in predicting long-term success, two logistic regression models were created. The first predicts success of applicants from DEP entry through first term. The second model looked only at the subset of those who survived DEP, so it predicts the long-term success of sailors from the time they begin active duty. Both models' logit coefficients showed that moral waivers are negative predictors of success. Among those who finish DEP and enter active duty, sailors with moral waivers have predicted odds of long-term success that are 32 percent lower than the corresponding odds of those without.

The strongest predictors of success included high school diploma, Test Score Category I, male, prior service, advanced paygrade (above E-1), not having a moral waiver, as well as Hispanic and Asian Pacific Islander or Native American. In the presence of all other variables, marital status was found to be insignificant in both models, while age and mission day were found to be significant only to the DEP model. Overall, the accession model performs better than the DEP model, and, in general, predicting long-term success from the beginning of DEP through first term is much more difficult than predicting success only from the beginning of active duty.

# I. INTRODUCTION

## A. BACKGROUND

Navy Recruiting Command is located in Millington, Tennessee. Its current mission is to manage the recruitment of men and women for enlisted and officer programs in the regular and reserve components of the United States Navy. With an annual accession goal of more than 40,000 enlisted sailors, Commander, Navy Recruiting Command (CNRC) employs more than 6,800 military, civilian, and contractor personnel (CNRC, 2007). The enormous amount of time and cost associated with the recruiting mission makes it paramount that CNRC (1) understand recruit characteristics that can be used to predict success and (2) operate a reliable screening system.

The existing screening process gained new importance in early 2005, after Commander, Naval Surface Forces, expressed concern over enlistment waivers that were being approved to assist applicants who would otherwise not make it through the screening process (Noble, 2005, p. 2). CNRC analysts responded by analyzing historical data from the Personnel Recruiting for Immediate and Delayed Enlistments (PRIDE) system (the Navy's accession management system) and found "no evidence recruits with moral waivers [are] causing a disproportionate number of disciplinary problems in the fleet" (Noble, 2005, p. 9). It recommended additional research, including a first term attrition study as well as the tracking of moral waivers, with an emphasis to "capture more detail in PRIDE" (Noble, 2005, p. 13).

## B. OBJECTIVE

In accordance with the recommendations above, this study attempted to identify success predictors and evaluate the Navy's enlistment screening system through the analysis of attrition and moral waiver data. Attrition reasons related to poor performance are presented in Table 1. Since the moral waiver detail captured by PRIDE was highlighted as a particular concern, the study first

conducted a series of comparisons to other waiver tracking sources in order to measure the quality of PRIDE waiver data.

| Code | Definition |
|---|---|
| 060 | Character or behavior disorder |
| 064 | Alcoholism |
| 065 | Discreditable incidents, civilian or military |
| 067 | Drugs |
| 071 | Civil court conviction |
| 072 | Security |
| 073 | Court-martial |
| 074 | Fraudulent entry |
| 075 | Absence without leave (AWOL) or desertion |
| 076 | Homosexuality |
| 077 | Sexual perversion |
| 078 | Good of the service (discharge in lieu of court-martial) |
| 080 | Misconduct, reason unknown |
| 081 | Unfitness, reason unknown |
| 083 | Pattern of minor disciplinary infractions |
| 084 | Commission of a serious offense |
| 085 | Failure to meet minimum qualifications for retention |
| 086 | Unsatisfactory performance (former Expeditious Discharge Program) |
| 087 | Entry level performance and conduct (former Trainee Discharge Program) |

Table 1. Portion of Interservice Separation Code (ISC) List Associated With Poor Performance (See Appendix B for Complete Table) [After, DMDC]

The study used data from enlistments of regular component enlisted personnel during Calendar Years (CYs) 2003 and 2004, a period of tremendous success for Navy recruiting. In fact, CNRC was awarded the Meritorious Unit Commendation for the period October 1, 2003 through September 30, 2004 for "outstanding leadership, aggressive team spirit, and commitment to mission accomplishment" (CNRC, 2007). The time window for the study was chosen so that the two-year cohort could be tracked through both the Delayed Entry Program (DEP) and a significant length of active duty service.

## C. SCREENING PROCESS

Upon processing for enlistment at a Military Entrance Processing Station (MEPS), an applicant is sworn into the inactive reserve, otherwise known as the

Delayed Entry Program (DEP). The applicant is then reserved an occupational specialty rating as well as a date to "ship" to Recruit Training Command (RTC). If an applicant does not initially meet the moral qualification for enlistment due to civil charges or a history of drug or alcohol abuse, a "moral waiver" may be considered. The screening process attempts to use moral waivers to ensure high moral character, which protects unit morale and prevents disciplinary problems that divert resources from the performance of military missions. The types of civil charges that may be waived are outlined in a series of charts labeled "A" through "D" (see Appendix A of this study).

The Navy's recruiting manual explains that waivers are to be recommended for only two reasons: (1) highly favorable traits or mitigating circumstances exist which outweigh the reason for disqualification, or (2) the enlistment is clearly in the best interests of the Navy. The waiver policies and authority levels in place at the beginning of CY 2003 are listed in Tables 2 and 3.

| Offense | Number of Offenses | Waiver Authority |
|---|---|---|
| Minor Traffic Violations (Chart "A") | Six or more violations | CO, NRD |
| Minor Non-Traffic/Minor Misdemeanors (Chart "B") | Three through five violations | CO, NRD |
| | Six or more violations | CNRC |
| Non-Minor Misdemeanor (Chart "C") | Up to three violations | CO, NRD |
| | Four or more violations | CNRC |
| Felonies (Chart "D") | One or more violations | CNRC |

Table 2. Waiver Policy for Civil Offenses [After, CNRC, 2002]

| Alcohol/Drug Abuse | Eligibility Determination Authority |
|---|---|
| Experimental/casual use of marijuana | Eligible (no waiver required); however, shipping of recruit must not occur until 45 days have passed since last use. |
| Two Behind-the-Wheel (BTW) offenses. | CNRC |
| Prior psychological or physical dependence upon any drug or alcohol. | CNRC |
| Abuse of stimulant or depressant drugs, narcotics, hallucinogenic or psychedelic drugs (other than experimental/casual use of marijuana). | CO, NRD; mandatory minimum waiting period of one year since last use or conviction. No waiver authorized (if under one year). |
| Any drug abuse while in DEP. (Positive Non-Instrumented Drug Test (NIDT) results while in DEP count as drug abuse in DEP.) | CO, NRD |
| Two or more alcohol related offenses. | CO, NRD |
| Tested positive at MEPS more than six months (marijuana) or one year (cocaine) ago. | CO, NRD<br>Second positive test – CNRC |
| Drug trafficking/supplying. | Not eligible. No waivers authorized. |
| LSD use within two years of enlistment. | Not eligible. |

Table 3. Eligibility Determination Policy for Alcohol/Drug Abusers
[After, CNRC, 2002]

The complete waiver process is executed as follows:

- The Waiver Briefing Sheet, NAVCRUIT 1133/39, is prepared by Navy liaison processors at MEPS, signed by the Commanding Officer (CO) or other waiver authority at one of the 31 Navy Recruiting Districts (NRDs), and retained as a permanent part of an applicant's service record.
- Up to six waiver processing codes are derived from a waiver code table (see Appendix B of this study). The codes, which consist of three letters to document the type of waiver and authority level required, are then recorded by Navy liaison processors into the appropriate sections of the DD Form 1966, Record of Military Processing – Armed Forces of the United States.
- The Navy's Classifier, or job placement specialist, enters the waiver codes from the DD Form 1966 into PRIDE.

- Navy liaison processors relinquish control of the service record to Military Entrance Processing Command (MEPCOM).
- Data from the DD Form 1966 is transcribed by data entry personnel into yet another computer system—the MEPCOM Integrated Reporting System (MIRS).

The post-enlistment verification processes for electronic and hardcopy records are different. Hardcopy service records undergo quality assurance checks. After the records have been reviewed at MEPS, the records accompany the enlistees to RTC, where officials review them for required legal documents. Any errors or omitted documents found in the hardcopy records are reported to CNRC to help determine the eligibility of the 31 districts for annual recruiting excellence awards. Unfortunately, there is no post-enlistment check of PRIDE waiver entries. It is clear that waivers were completed; in part, this study investigated how accurately these waivers were recorded in PRIDE.

## D. ORGANIZATION

Chapter II is a literature review, and Chapter III reviews data and methodology. Chapter IV presents data analysis of waiver reporting accuracy as well as moral-related losses from active duty. Chapter V discusses the histories of success for those with and without moral waivers and shows the results of logistic regression models developed to predict success. Finally, Chapter VI provides conclusions and recommendations.

THIS PAGE INTENTIONALLY LEFT BLANK

# II. LITERATURE REVIEW

## A. HALL (1999)

The topic of moral waivers was visited once before by the Operations Research (OR) Department at the Naval Postgraduate School (NPS). Hall's thesis used logistic regression and classification trees in his thesis to analyze the effect of moral waivers on attrition occurring within the first two years of enlisted service. CNRC provided the demographic and attrition data from PRIDE and TrainTrack (a database no longer in service) for the Fiscal Year (FY) 1995 and 1996 cohort of Navy accessions. The author used available waiver codes, which at the time could not distinguish general enlistment waivers from program waivers (more stringent requirements for certain high-security jobs). Therefore, the dataset was reduced from 86,815 to 56,510 to account for possible bias from program waivers. Hall concluded that those with moral waivers are more likely to have "unsuitability" attrition than those without moral waivers. Prediction models suggested that those entering the Navy with moral waivers and less than a high school diploma perform most poorly. The author did not recommended policy changes due to the challenging recruiting environment existing at the time of his research. However, it was recommended that "a similar study to this one be conducted once data is available that does not include program waivers in the moral waiver data" (p. 65).

Major recruiting policy and procedural changes have occurred since Hall completed his research:

- Program waivers now have specific codes to distinguish them from enlistment eligibility waivers.
- Waiver codes were modified to allow for identification of multiple waivers.
- Attrition codes were modified.

- High Performance Predictor Profile (HP3) screening replaced Compensatory Screening Model (CSM) policy for determining eligibility for those applicants without a high school diploma.
- The Navy cancelled the "Sunset Rule," which could override the requirement for a waiver if three years had elapsed since certain offenses.
- The Chart system, a naming convention, was created to more easily categorize the levels of civil waivers.

Since Hall discussed related research completed prior to his thesis, it will be left to the reader to review that discussion. This study, in essence a follow-up to Hall's thesis, will review four other works related to the topic of this study that have been published since 1999.

## B. GOVERNMENT ACCOUNTING OFFICE (GAO) (1999)

GAO provided an analysis of moral waiver data from FYs 1990 through 1997, in support of its assessment of Department of Defense (DoD) policies for screening criminal histories and granting moral waivers. Defense Manpower Data Center (DMDC) data was used despite a detailed explanation about how "the services and the Military Entrance Processing Command apply moral waiver codes inconsistently" (p. 26). The report showed that across all services, the overall percentage of moral waivers completed went down year-to-year during the entire period. Interestingly, the percentage of non-minor misdemeanors rose during the same period from 33 percent to 58 percent. GAO broke down the first-term separation reasons for nearly 600,000 individuals, and it was found that 19.5 percent of accessions who had a moral waiver left the service "for generally the same reasons and at similar rates . . . [as those] who enlisted without moral waivers" (p. 29). GAO recommended the use of the Electronic Personnel Security Questionnaire (EPSQ) as well as the Integrated Automated Fingerprint Identification System in order to improve background checks and therefore reduce the number of sailors entering with "undesirable backgrounds."

## C. PUTKA, NOBLE, BECKER, AND RAMSBERGER (2004)

This report to the Directorate of Accession Policy examined moral character screening policies used to allow waivers for applicants who have records of criminal behavior and/or drug and alcohol abuse. DMDC provided accession and loss data up to June 2003 for those who entered service from June to September 2001. EPSQs collected from various sources provided criminal background information on the accession cohort. Hierarchical logistic regression and point-biserial correlation analysis methods were used, and results showed that those with moral waivers were not related to non-moral attrition, but instead were significantly tied to moral losses and disciplinary problems while on active duty. Recommendations included:

- Adoption of a "standard law violation classification framework" and clarifications in recruiting manuals to reduce subjectivity and assist processors across the services in recording identical waiver codes for the same types of offenses.
- Addition of more detailed instructions concerning multiple waiver requirements so that processors become better trained to use more than one waiver entry field when applicable.
- Use of EPSQ data for waiver consideration.
- Requirements for moral waiver applicants to meet higher standards.

## D. NOBLE (2005)

Noble, head of research at CNRC, looked at accessions from FY 2000 to FY 2004 to assess the validity of concerns expressed by Commander, Naval Surface Force, that enlistment waivers cause a "disproportionate amount of disciplinary problems" (p. 2). The author found that newer, tougher rules had reduced the percentage of total waivers from FY 2000 to FY 2004 by 6 percent. The percentage of moral waivers granted during the same period went down by 2.5 percent. It was suggested by Noble that the "target market is more likely to

need a waiver" (p. 12) and that elimination of waivers in Navy recruiting would cost between $58M (moral only) and $100M (all waivers). Noble recommended further research to look at (1) first-term attrition, (2) first-term disciplinary problems, and (3) tracking of moral waivers, with an emphasis to "capture more detail in PRIDE" (p. 13).

## E. BACZKOWSKI (2006)

Baczkowski examined the effect of DEP entry date on attrition from the Marine Corps Recruit Depot. The author used regression analysis in his thesis to examine entry (1) on the last day of the month, (2) in the last week of the month, and (3) during the last ten days of the month. Demographic and attrition data was collected from the Total Force Data Warehouse in November 2005 for a 19-month cohort that entered active duty between October 2003 and April 2005. Results of all three regression models showed that the day a recruit enters DEP is not a significant factor in predicting boot camp attrition. These findings countered previous research that had identified higher DEP attrition by those entering during the final week. The author recommended a cost analysis to "determine the feasibility of adding additional recruiters to manage the [DEP] program, allowing the 'street recruiters' to focus on obtaining new contracts" (p. 50). A second recommendation backed an idea for a pilot program in which higher-risk applicants would be observed after shipping earlier than other enlistees to see whether or not attrition rates change.

# III. DATA AND METHODOLOGY

## A. DATA SOURCES

### 1. Commander, Navy Recruiting Command (CNRC)

CNRC provided all PRIDE records for applicants who entered DEP for a three-year period, during FYs 2003-2005. In order to attain the desired dataset, any records outside of CYs 2003 and 2004 were eliminated. It was found that 3,836 Social Security Numbers (SSNs) were duplicated. These records were sorted by SSN and DEP entry date, and only the latest instance of DEP entry was retained. The resulting dataset contained 99,375 applicants. Each record contained the six waiver code fields from the DD Form 1966, as well as personal characteristics such as gender, date of birth, aptitude test scores, education, and race. For the purposes of this study, only moral-related waiver codes starting with a first character of D or F, as presented in Table 4, were considered. See Appendix B of this study for the complete waiver code table.

| First Character – Type of Enlistment/Program Waiver | | Second Character — Sub-Type for the Enlistment/Program Waiver | |
|---|---|---|---|
| Basic Enlistment Eligibility Requirements (BEERS) Law Violations | D | Minor Traffic Offense | A |
| | | Serious Traffic Offense | B |
| | | Minor Non-Traffic/Minor Misdemeanor | C |
| | | Serious Non-Traffic/Major Misdemeanor | D |
| | | Felony (Adult) | E |
| | | Felony (Juvenile/Youthful Offender) | F |
| BEERS Drug Involvement (Not Law Violation) | F | Alcohol Abuse | A |
| | | Marijuana Usage | B |
| | | Other Drug Usage | C |
| | | Drug/Alcohol Test Positive | D |

Table 4. Portion of Waiver Code Table [After, CNRC, 2002]

### 2. Defense Manpower Data Center (DMDC)

DMDC provided loss dates and codes as well as MIRS waiver records for these 99,375 enlistees up to May 2007. Assuming that applicants entering prior

to the last day of CY 2004 could remain in DEP for a maximum of 365 days, all enlistees in the study must have either undergone attrition or entered active duty by January 1, 2005. Therefore, all sailors were tracked for a minimum of 17 months of active service. Those who entered in January 2003 (the beginning of the study period) were tracked for 53 months of active duty service.

### 3. Navy Recruiting District (NRD) Nashville

NRD Nashville contributed a third source of waiver information by providing applicable portions of its hardcopy and electronic waiver logs, which were updated daily by the waivers clerk or other cross-trained members of the enlisted programs office at district headquarters. The district started recording waiver data in fall 2002, in an effort to capture more detail than PRIDE—details that could help the district's leaders better analyze their internal waiver process. Figure 1 shows a portion of one page of the waiver logbook (date, name, and SSN omitted). There were more than 500 log entries identified and transcribed onto a spreadsheet for analysis. To confirm the soundness of the waiver process in NRD Nashville during CYs 2003 and 2004, it is important to note that the command received zero discrepancies in the waivers category during a biennial inspection by CNRC in June 2004.

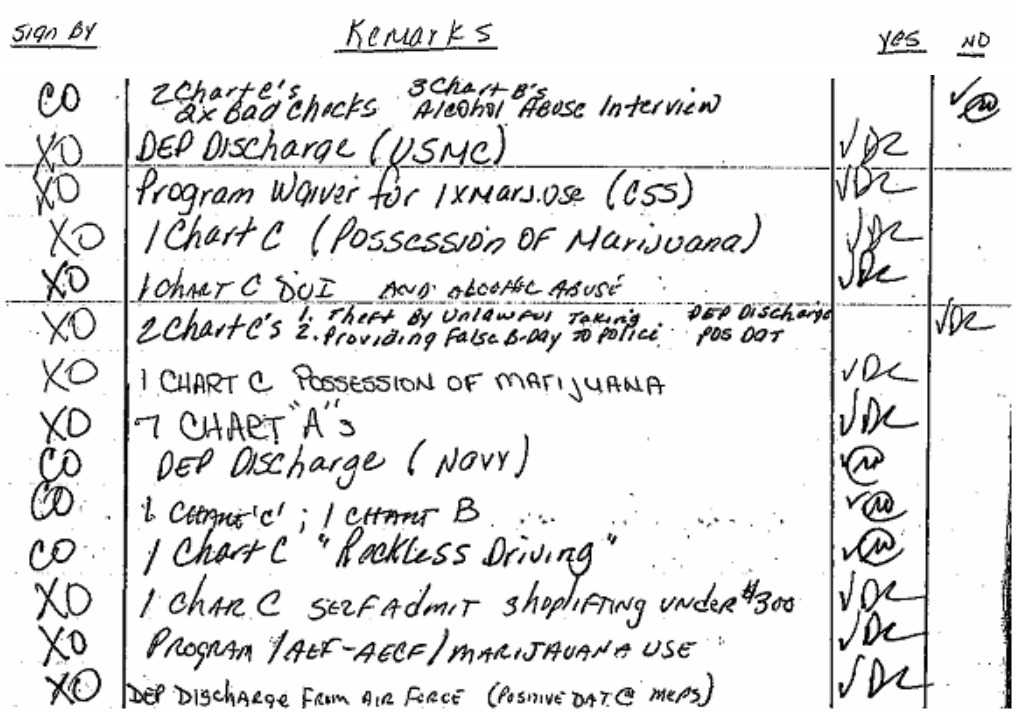


Figure 1. Portion of Waiver Log [After, NRD Nashville]

## B. DATA ERRORS

### 1. Commander, Navy Recruiting Command (CNRC)

In the PRIDE dataset, there were eight waiver entries with invalid codes that started with a D or F. Once these invalid codes were eliminated, only three of the eight applicants still had at least one valid moral waiver code remaining. Also, it was found that some of the deleted duplicates had contained waiver codes that were not identified in the retained record for that SSN. A count found 85 individuals, many with waiver codes from a previous DEP entry prior to CYs 2003 and 2004, who did not have a moral waiver code retained in the final data set. These individuals accounted for 0.09 percent of the dataset. The next section discusses PRIDE duplicate entries and their impact on analysis in more detail.

### 2. Defense Manpower Data Center (DMDC)

Several entries were found to contain a loss date and loss code, but no information for the last Unit Identification Code (UIC) assigned. It was confirmed, however, that any record matching this combination indicated that the enlistee left active duty service within his or her first few weeks at RTC.

### 3. Navy Recruiting District (NRD) Nashville

Of the three drug waiver sub-types (marijuana usage, other drug usage, and drug or alcohol test positive), it was the test positive sub-type that provided difficulties in transcription. For example, there are nearly 50 instances in the logbook of DEP discharge waivers due to a positive drug test. However, there are more than 100 other entries that simply show "DEP discharge." Since these waivers may or may not have been a result of positive drug tests, it was deemed that there was inadequate specificity to merit the inclusion of drug-related waivers. In general, however, all civil and alcohol abuse waivers were easily transcribed.

In addition to the drug waiver issue, there was one entry that did not match by SSN to the PRIDE dataset, and this record was deleted. Fifty-nine waivers were entered only in the electronic log, and 47 of these applicants entered DEP. Twenty-four applicants who were approved for a waiver did not enter DEP (refused to enlist or were disapproved by higher authority). Three applicants were approved prior to December 31, 2004, but did not enter the DEP until CY 2005; these were removed from the dataset. Eleven applicants who were listed in the log had already enlisted prior to January 1, 2003 and had simply required additional waivers for offenses committed while in DEP; these, too, were removed from the dataset. Twenty-four applicants had more than one entry due to a mistake or a multiple waiver requirement; these entries were combined into one entry during transcription. Thirty-two logbook entries did not have any indication of a waiver decision; 26 of these applicants entered DEP and were therefore assumed to have had their waivers approved. Twenty-three

approved waivers read only “Physical Violence Interview,” so it is assumed that these waivers should be classified as Chart C offenses (for assault).

### 4. All Sources

Waiver data entry bias exists for several reasons, including different interpretations of coding instructions (GAO, 1999, p. 26 and Putka et al., 2004, pp. 117-118). Another problem is the multilevel approach to entering data within each MEPS. One processor prepares the initial waiver briefing sheet. The same or another processor may or may not later transcribe the waiver description on the waiver briefing sheet into applicable codes and handwrite them on a DD Form 1966. The classifier then may or may not enter any codes from the form into PRIDE. It is probable that after the Navy office turns over the service record, MEPCOM Integrated Reporting System (MIRS) waiver fields become more populated than PRIDE waiver fields since MEPCOM data entry personnel have only one task, which is the entry of all data (not just waiver codes) directly from the DD Form 1966 into MIRS.

To better explain the differences that can appear between PRIDE and MIRS data entry, the actual records for two applicants are shown in Tables 5 and 6. Standard operating procedures directed that “YYY” be entered in the first field if no waiver was required. If no second or third waivers were required, then the two additional fields were to be left blank. As a reminder, Table 4 provides a legend for waiver codes used in this example, and it is the second character that determines which civil “chart” is applicable. There were five initial record entries provided by PRIDE, and after duplicates were deleted, only Record 3 for Applicant A and Record 2 for Applicant B were retained. For applicant A, three waiver codes were deleted (Charts A, B, and C). For applicant B, two waiver codes (Charts A and B) were retained, but the most serious civil waiver code of the three (Chart C) was deleted.

| Before | Waiver 1 | Waiver 2 | Waiver 3 |
|---|---|---|---|
| Applicant A Record 3 | YYY | | |
| Applicant A Record 2 | DDE | | |
| Applicant A Record 1 | DAE | DCE | |
| Applicant B Record 2 | DAE | DCE | |
| Applicant B Record 1 | DDE | | |
| **After** | **Waiver 1** | **Waiver 2** | **Waiver 3** |
| Applicant A Record 3 | YYY | | |
| Applicant B Record 2 | DAE | DCE | |

Table 5. Example of PRIDE Waiver Data

Only one record per applicant was provided by MIRS. For Applicant A, none of the three civil waiver codes shown in the PRIDE entries were recorded, but a medical waiver is recorded. Applicant B's record from MIRS does show the two civil waiver codes that were also in PRIDE, but the MIRS record also includes a failed drug test waiver code that did not appear in PRIDE. Obviously, waiver studies using the same group of applicants could possibly produce different results depending on the data source used.

| DMDC Record | Waiver 1 | Waiver 2 | Waiver 3 |
|---|---|---|---|
| Applicant A | HCB | | |
| Applicant B | DCE | DAE | FDE |

Table 6. Example of MIRS Waiver Data

## C. VARIABLE DEFINITIONS

The independent variables used in this study include demographic, loss, and waiver data elements. Tables showing the fields provided by CNRC, DMDC, and NRD Nashville are listed in Appendix C. This study used the concept of "highest civil waiver" to account for data entry and duplicate record bias. After the types of civil waivers for a single individual were determined, only the highest civil waiver type received a flag. In the end, a series of flags were created to answer five basic questions about that single individual:

- What was the highest civil waiver recorded?
- Did the applicant require a civil waiver in order to enlist?

- Did the applicant require a drug-related waiver in order to enlist?
- Did the applicant require an alcohol abuse waiver in order to enlist?
- Did the applicant require a moral waiver in order to enlist?

**Example 1: DBE, DCE, and DDE are recorded by CNRC.**

Interpretation: One Chart B and two Chart C waivers.

Variables: C.AFlag: 0 C.CivilFlag: 1
C.BFlag: 1 C.DrugFlag: 0
C.CFlag: 1 C.AlcFlag: 0
C.DFlag: 0 C.MoralFlag: 1
C.HighCivil: 3 (for Chart C)

**Example 2: DAE and FAE are recorded by DMDC.**

Interpretation: One Chart A and one alcohol abuse waiver.

Variables: D.AFlag: 1 D.CivilFlag: 1
D.BFlag: 0 D.DrugFlag: 0
D.CFlag: 0 D.AlcFlag: 1
D.DFlag: 0 D.MoralFlag: 1
D.HighCivil: 1 (for Chart A)

**Example 3: FAE and FBE are recorded by CNRC.**

Interpretation: One alcohol abuse waiver and one drug-related waiver.

Variables: C.AFlag: 0 C.CivilFlag: 0
C.BFlag: 0 C.DrugFlag: 1
C.CFlag: 0 C.AlcFlag: 1
C.DFlag: 0 C.MoralFlag: 1
C.HighCivil: 0 (no civil)

## D. METHODOLOGY

The data mining software Clementine 11.1 was used for all aspects of this study. For data comparisons, the actual number of waivers recorded by the three individual data sources is listed along with the best available "truth," a union of the data provided by PRIDE, MIRS, and NRD Nashville. In other words, if at

least one of those three sources showed a specific waiver for an applicant, then the “TRUTH” flag was set in that waiver category for that particular applicant.

For the purposes of this study, a successful recruit was defined as one who entered DEP, got sworn into active duty, and served without receiving an ISC. In order to investigate the characteristics of success, a flag called “SUCCESS” was derived to serve as a dependent variable for use in logistic regression. Note that an enlistee was considered a success if he or she received an ISC due to completion of enlistment contract, reenlistment, or selection to an officer program.

Large-sample population proportion tests were used to determine whether or not there was a difference between the proportions of recorded data as well as between the proportions of successful applicants. The null hypothesis was that there is no difference, and an alpha of 0.01 was applied.

# IV. DATA COMPARISONS

## A. WAIVER RECORDING ACCURACY

Analysis on PRIDE and MIRS accuracy was performed separately for four groups:

- Navy-wide applicants who joined DEP
- Navy-wide accessions to active duty
- NRD Nashville applicants who joined DEP
- NRD Nashville accessions to active duty

For each of these four groups, all available data was compared to the union of the two data sources, called the TRUTH.

### 1. Navy Delayed Entry Program (DEP)

Table 7 shows that for the 99,375 applicants who entered DEP, PRIDE reported 9,452 individuals (9.5 percent) who required at least one moral enlistment waiver. This compared to 11,271 for MIRS (11.3 percent) and 14,012 for the TRUTH (14.1 percent). Note that PRIDE reflected only two-thirds of the TRUTH.

| | PRIDE | | | MIRS | | |
|---|---|---|---|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** | **Percent of TRUTH** | **Number** | **Percent of Dataset** | **Percent of TRUTH** |
| Chart A | 306 | 0.3% | 70.8% | 322 | 0.3% | 74.5% |
| Chart B | 1,685 | 1.7% | 71.0% | 1,754 | 1.8% | 73.9% |
| Chart C | 6,204 | 6.2% | 66.1% | 7,587 | 7.6% | 80.8% |
| Chart D | 89 | 0.1% | 41.2% | 198 | 0.2% | 91.7% |
| **Total Civil *** | 8,284 | 8.3% | 67.9% | 9,861 | 9.9% | 80.8% |
| **Alcohol Abuse** | 490 | 0.5% | 71.6% | 488 | 0.5% | 71.3% |
| **Drug-Related** | 1,179 | 1.2% | 59.7% | 1,506 | 1.5% | 76.3% |
| **Moral**** | 9,452 | 9.5% | 67.5% | 11,271 | 11.3% | 80.4% |

| | TRUTH *** | |
|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** |
| Chart A | 432 | 0.4% |
| Chart B | 2,374 | 2.4% |
| Chart C | 9,390 | 9.4% |
| Chart D | 216 | 0.2% |
| **Total Civil *** | 12,203 | 12.3% |
| **Alcohol Abuse** | 684 | 0.7% |
| **Drug-Related** | 1,974 | 2.0% |
| **Moral **** | 14,012 | 14.1% |

* Only the “highest” civil waiver per applicant is counted, so A-D sum to total civil.
** Not the sum of total civil, alcohol, and drug waivers. An applicant can count once for each of those categories, but only once in the moral category.
*** Reflects the union of information received by all data sources.

Table 7. Waiver Summary for Applicants Entering Navy-Wide DEP

### 2. Navy Accessions

Table 8 shows that for the 76,897 enlistees who entered active duty, PRIDE reported that 7,516 individuals (9.8 percent) required at least one moral enlistment waiver, compared to 10,302 for MIRS (13.4 percent) and 11,418 for the TRUTH (14.8 percent).

| | PRIDE | | | MIRS | | |
|---|---|---|---|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** | **Percent of TRUTH** | **Number** | **Percent of Dataset** | **Percent of TRUTH** |
| Chart A | 261 | 0.3% | 70.9% | 300 | 0.4% | 81.5% |
| Chart B | 1,322 | 1.7% | 67.6% | 1,678 | 2.2% | 85.8% |
| Chart C | 4,908 | 6.4% | 63.5% | 7,023 | 9.1% | 90.8% |
| Chart D | 84 | 0.1% | 67.2% | 112 | 0.1% | 89.6% |
| **Total Civil *** | 6,575 | 8.6% | 65.6% | 9,113 | 11.9% | 91.0% |
| **Alcohol Abuse** | 407 | 0.5% | 68.4% | 475 | 0.6% | 79.8% |
| **Drug-Related** | 935 | 1.2% | 64.0% | 1,210 | 1.6% | 82.9% |
| **Moral **** | 7,516 | 9.8% | 65.8% | 10,302 | 13.4% | 90.2% |

| | TRUTH *** | |
|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** |
| Chart A | 368 | 0.5% |
| Chart B | 1,956 | 2.5% |
| Chart C | 7,731 | 10.1% |
| Chart D | 125 | 0.2% |
| **Total Civil *** | 10,019 | 13.0% |
| **Alcohol Abuse** | 595 | 0.8% |
| **Drug-Related** | 1,460 | 1.9% |
| **Moral **** | 11,418 | 14.8% |

* Only the "highest" civil waiver per applicant is counted, so A-D sum to total civil.
** Not the sum of total civil, alcohol, and drug waivers. An applicant can count once for each of those categories, but only once in the moral category.
*** Reflects the union of information received by all data sources.

Table 8. Waiver Summary for Navy-Wide Accessions

### 3. Navy Recruiting District (NRD) Nashville Delayed Entry Program (DEP)

Table 9 presents the Nashville subset, consisting of 2,819 applicants entering the district's DEP. As explained in Chapter II, Section B.3, drug-related waivers, and therefore total moral waivers, were excluded from the analysis of Nashville data. Previously defined as the union of two data sources, the TRUTH is now the union of three data sources (PRIDE, MIRS, and NRD Nashville). The addition of NRD Nashville data drove up the TRUTH significantly.

| | PRIDE | | | MIRS | | |
|---|---|---|---|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** | **Percent of TRUTH** | **Number** | **Percent of Dataset** | **Percent of TRUTH** |
| Chart A | 8 | 0.3% | 36.4% | 4 | 0.1% | 18.2% |
| Chart B | 64 | 2.3% | 68.8% | 72 | 2.6% | 77.4% |
| Chart C | 219 | 7.8% | 43.0% | 262 | 9.3% | 51.5% |
| Chart D | 2 | 0.1% | 40.0% | 5 | 0.2% | 100.0% |
| **Total Civil *** | 293 | 10.4% | 53.2% | 343 | 12.2% | 62.3% |
| **Alcohol Abuse** | 12 | 0.4% | 19.4% | 17 | 0.6% | 27.4% |

| | Nashville | | | TRUTH ** | |
|---|---|---|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** | **Percent of TRUTH** | **Number** | **Percent of Dataset** |
| Chart A | 16 | 0.6% | 72.7% | 22 | 0.8% |
| Chart B | 10 | 0.4% | 10.8% | 93 | 3.3% |
| Chart C | 460 | 16.3% | 90.4% | 509 | 18.1% |
| Chart D | 2 | 0.1% | 40.0% | 5 | 0.2% |
| **Total Civil *** | 488 | 17.3% | 88.6% | 551 | 19.5% |
| **Alcohol Abuse** | 55 | 2.0% | 88.7% | 62 | 2.2% |

* Only the “highest” civil waiver per applicant is counted, so A-D sum to total civil.
** Reflects the union of information received by all data sources.

Table 9. Waiver Summary for 2,819 Applicants Entering NRD Nashville DEP

Civil waivers were compared first. It is shown that PRIDE reported that 293 individuals (10.4 percent) required at least one civil enlistment waiver, compared to 343 for MIRS (12.2 percent), 488 for Nashville (17.3 percent), and 551 for the TRUTH (19.5 percent). Note that PRIDE and MIRS each provided only about half of the TRUTH in the Chart C category, which comprised 74.9 percent of the “highest” civil waivers completed Navy-wide during the period of this study.

Alcohol abuse waivers are also compared in Table 9. It is clear that the differences are quite large in this category, in which Nashville provided more than four times as many waivers as PRIDE and three times as many waivers as MIRS. These large differences may be due to the way in which waiver briefing sheet summaries are transcribed into codes. By reviewing Figure 1 in Chapter III, it is observed in the first and fifth entries (just as seen on waiver briefing sheets) that alcohol abuse interviews are sometimes “buried” behind the civil charges that necessitated the alcohol abuse interviews in the first place.

### 4. Navy Recruiting District (NRD) Nashville Accessions

Table 10 shows that for the 2,185 enlistees entering active duty from Nashville, PRIDE reported that 238 individuals (10.9 percent) required at least one civil enlistment waiver, compared to 321 for MIRS (14.7 percent), 390 for Nashville (17.8 percent), and 441 for the TRUTH (20.2 percent).

| | PRIDE | | | MIRS | | |
|---|---|---|---|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** | **Percent of TRUTH** | **Number** | **Percent of Dataset** | **Percent of TRUTH** |
| Chart A | 5 | 0.2% | 33.3% | 4 | 0.2% | 26.7% |
| Chart B | 54 | 2.5% | 66.7% | 71 | 3.2% | 87.7% |
| Chart C | 177 | 8.1% | 43.6% | 244 | 11.2% | 60.1% |
| Chart D | 2 | 0.1% | 100.0% | 2 | 0.1% | 100.0% |
| **Total Civil *** | 238 | 10.9% | 54.0% | 321 | 14.7% | 72.8% |
| **Alcohol Abuse** | 10 | 0.5% | 18.5% | 16 | 0.7% | 29.6% |

| | Nashville | | | TRUTH ** | |
|---|---|---|---|---|---|
| **Waiver Type** | **Number** | **Percent of Dataset** | **Percent of TRUTH** | **Number** | **Percent of Dataset** |
| Chart A | 11 | 0.5% | 73.3% | 15 | 0.7% |
| Chart B | 8 | 0.4% | 9.9% | 81 | 3.7% |
| Chart C | 369 | 16.9% | 90.9% | 406 | 18.6% |
| Chart D | 2 | 0.1% | 100.0% | 2 | 0.1% |
| **Total Civil *** | 390 | 17.8% | 88.4% | 441 | 20.2% |
| **Alcohol Abuse** | 47 | 2.2% | 87.0% | 54 | 2.5% |

* Only the "highest" civil waiver per applicant is counted, so A-D sum to total civil.
** Reflects the union of information received by all data sources.

Table 10. Waiver Summary for 2,185 NRD Nashville Accessions

## B. MORAL-RELATED LOSSES FROM ACTIVE DUTY

### 1. Navy Accessions

There were a total of 12,772 active duty personnel throughout the Navy who left the service due to poor performance. These "moral losses" made up 16.6 percent of the total of 76,897 enlistees across the nation that entered active duty during this time. This section reviews the analysis of those moral losses who were granted moral waivers. Table 11 presents a breakdown of how each

data source reported the moral waiver status of those who were moral losses. PRIDE reported that 7,516 of its accessions had received a moral waiver, and a total of 1,774 of these (23.6 percent) left the service as a moral loss. MIRS (24.5 percent) and the TRUTH (24.1 percent) show similar proportions. Also, note that PRIDE (15.9 percent), MIRS (15.4 percent), and the TRUTH (15.3 percent) all present similar moral loss proportions for those who had not required a moral waiver upon enlistment. When tested, all three sources showed that those who required a moral waiver were significantly more likely to be moral losses (all three at p = 0.00000).

| | PRIDE | | MIRS | | TRUTH | |
|---|---|---|---|---|---|---|
| | **Moral Waiver** | **No Moral Waiver** | **Moral Waiver** | **No Moral Waiver** | **Moral Waiver** | **No Moral Waiver** |
| **Number of Moral Losses** | 1,774 | 10,998 | 2,529 | 10,243 | 2,751 | 10,021 |
| **Number of Accessions** | 7,516 | 69,381 | 10,302 | 66,595 | 11,418 | 65,479 |
| **% of Moral Losses** | 23.6% | 15.9% | 24.5% | 15.4% | 24.1% | 15.3% |

Table 11. Navy-Wide Moral Losses With and Without a Moral Waiver as Reported by Different Data Sources

### 2. Navy Recruiting District (NRD) Nashville Accessions

There were a total of 431 active duty personnel who entered active duty from NRD Nashville, but left the service due to poor performance. These “moral losses” made up 19.7 percent of the total 2,185 enlistees who entered active duty during the period of this study. This section reviews the analysis of Nashville moral losses who had been granted civil or alcohol abuse waivers.

Table 12 presents a breakdown of how each data source reported the civil waiver status of those who were moral losses. PRIDE reported that 238 of its accessions had received a civil waiver, and a total of 65 of these (27.3 percent) left the service as a moral loss. MIRS (26.2 percent), Nashville (25.6 percent), and the TRUTH (25.6 percent) reported similar proportions. PRIDE (p = 0.00183), MIRS (p = 0.00169), Nashville (p = 0.00120), and the TRUTH

(p = 0.00049) all show that those who were moral losses were significantly more likely to have received a civil waiver upon enlistment.

| | PRIDE | | MIRS | | Nashville | | TRUTH | |
|---|---|---|---|---|---|---|---|---|
| | Civil Waiver | No Civil Waiver | Civil Waiver | No Civil Waiver | Civil Waiver | No Civil Waiver | Civil Waiver | No Civil Waiver |
| **Number of Moral Losses** | 65 | 366 | 84 | 347 | 100 | 331 | 113 | 318 |
| **Number of Accessions** | 238 | 1,947 | 321 | 1,864 | 390 | 1,795 | 441 | 1,744 |
| **% of Moral Losses** | 27.3% | 18.8% | 26.2% | 18.6% | 25.6% | 18.4% | 25.6% | 18.2% |

Table 12. NRD Nashville Moral Losses With and Without a Civil Waiver as Reported by Different Data Sources

Table 13 presents a breakdown of how each data source reported just the alcohol abuse waiver status of those out of Nashville who were moral losses. It is important to note that alcohol abuse waivers may have been processed for applicants that did not necessarily require civil waivers. For example, applicants identified with two alcohol-related Chart B offenses needed an alcohol abuse waiver, but no civil waiver (required in this instance only for three or more Chart B offenses).

| | PRIDE | | MIRS | | Nashville | | TRUTH | |
|---|---|---|---|---|---|---|---|---|
| | Alcohol Abuse Waiver | No Alcohol Abuse Waiver | Alcohol Abuse Waiver | No Alcohol Abuse Waiver | Alcohol Abuse Waiver | No Alcohol Abuse Waiver | Alcohol Abuse Waiver | No Alcohol Abuse Waiver |
| **Number of Moral Losses** | 3 | 428 | 3 | 428 | 16 | 415 | 18 | 413 |
| **Number of Accessions** | 10 | 2,175 | 16 | 2,169 | 47 | 2,138 | 54 | 2,131 |
| **% of Moral Losses** | 30.0% | 19.7% | 18.8% | 19.7% | 34.0% | 19.4% | 33.3% | 19.4% |

Table 13. NRD Nashville Moral Losses With and Without an Alcohol Abuse Waiver as Reported by Different Data Sources

PRIDE reported that ten accessions from NRD Nashville received an alcohol abuse waiver, and a total of three of these (30.0 percent) left the service as a moral loss. MIRS (18.8 percent) reported a lower proportion, while Nashville (34.0 percent) and the TRUTH (33.3 percent) reported higher proportions. In this category, PRIDE ($p = 0.413134$), MIRS ($p = 0.921602$), Nashville ($p = 0.0126458$), and the TRUTH ($p = 0.01094$) all showed that, based on this subset, those with alcohol abuse waivers were no more likely than those without them to end up as a moral loss.

## C. SUMMARY

Section A of this chapter looked at the accuracy of waiver data sources. In general, MIRS recorded more waivers than PRIDE, and Nashville recorded more waivers than both MIRS and PRIDE. Note that the proportion of those entering active duty with moral waivers was higher than the proportion of those entering DEP with such waivers. Upon further investigation, it was found that only 11.6 percent of DEP losses had been granted moral waivers, while 14.8 percent of those who finished DEP had been approved for a moral waiver. In other words, those with moral waivers did better in successfully completing DEP. Similar findings were made for civil waivers out of NRD Nashville, where 17.5 percent of DEP losses had a waiver compared to 20.1 percent for those who successfully completed DEP.

Section B of this chapter analyzed active duty attrition data in order to investigate whether or not those granted moral waivers were more likely to leave the service due to moral-related reasons. When population proportion tests were performed, all data sources showed that those who required a moral waiver were significantly more likely to be moral losses than those who did not receive a moral waiver.

# V. SUCCESS OF NAVY APPLICANTS

For the purposes of this study, an applicant was considered successful if he or she completed DEP, entered into active duty, and served through May 2007. An enlistee was also considered successful if he or she completed their first term or was accepted into an officer program. Section A of this chapter compares actual success rates by moral waiver status. Section B summarizes data conversions that were made in order to create appropriate logistic regression variables. Section C presents the results of two logistic regression models. The first model predicts the long-term success of applicants from the beginning of DEP through first term, while the second model predicts the success of sailors once they have entered active duty.

## A. SUCCESS HISTORIES OF APPLICANTS WITH OR WITHOUT MORAL WAIVERS

An applicant was considered to have received a moral waiver if either data source, PRIDE or MIRS, recorded a civil, alcohol abuse, or drug-related waiver for that individual. Table 14 shows the long-term success rates, broken down by moral waiver status, of all 99,375 Navy-wide applicants from the beginning of DEP through first term. Based on this data set, moral waivers lowered the probability of success.

| | Number That Entered DEP | Success Rate |
|---|---|---|
| **No Moral Waiver** | 85,363 | 57.4% |
| **Moral Waiver *** | 14,012 | 54.4% |

*Used TRUTH data.

Table 14. Success of the 99,375 Navy-Wide Applicants by Moral Waiver Status Who Entered DEP

Table 15 presents the success rates for the subset of 76,897 Navy-wide accessions. These sailors had all completed DEP, so this success rate was

measured from the beginning of active duty through first term. It was found that of these accessions, those with moral waivers again succeeded less often. Note that the success gap widened between those measured from the beginning of DEP through first term and those measured only from point of accession.

| | Number of Accessions | Success Rate |
|---|---|---|
| **No Moral Waiver** | 65,479 | 74.6% |
| **Moral Waiver *** | 11,418 | 66.7% |

*Used TRUTH data.

Table 15. Success of the 76,897 Navy-Wide Enlistees by Moral Waiver Status Who Had Finished DEP and Entered Active Duty Service

## B. DATA CONVERSIONS

The logistic regression models presented later in Section C target the binomially distributed dependent variable SUCCESS. Before logistic regression could be attempted, several data fields had to be modified. Table 16 presents the final list of regressors, all of which were tested in the models through stepwise analysis prior to any elimination. Data descriptions for the variables and their respective levels (if not easily apparent) are shown in Table 17.

| VARIABLE | TYPE | LEVELS |
|---|---|---|
| AGE | Set | 5 |
| PROG | Set | 13 |
| AFQT | Set | 5 |
| REGION | Set | 4 |
| RACE | Set | 5 |
| EDUC | Set | 4 |
| BONUS | Set | 5 |
| MARITAL | Set | 3 |
| MALE | Flag | 2 |
| MISSION_DAY | Flag | 2 |
| MORAL_TRUE | Flag | 2 |
| PAYGRADE | Flag | 2 |
| PRIOR | Flag | 2 |
| SUCCESS | Flag | 2 |

Table 16. List of Variables Used in Logistic Regression

| Variable | Description |
|---|---|
| **PROG** | |
| 2YO | Two Year Obligor General Details (GENDET) |
| SG | School Guarantee |
| SF | Subfarer |
| 5YO | Five Year Obligor |
| GTEP | GENDET Targeted Enlistment Program |
| NF | Nuclear Field |
| AEF | Advanced Electronics Field |
| NCSA | National Call to Service |
| TEP | Training and Administration of the Reserve (TAR) Enlistment Program |
| ATF | Advanced Technical Field |
| JOBS | Job Oriented Basic Skills |
| NPSB | Non-Prior Service Basic |
| SEAL | Sea, Air, Land (special operations) |
| **EDUC** | |
| D | High school diploma graduate |
| G | GED or equivalency |
| N | Non-graduate |
| **MARITAL** | |
| M | Married |
| S | Single |
| D | Divorced |
| **RACE** | |
| W | White |
| B | Black |
| H | Hispanic |
| A | Asian Pacific Islander or Native American |
| O | Other |
| **AFQT** | |
| I | 93-99 |
| II | 65-92 |
| IIIA | 50-64 |
| IIIB | 31-49 |
| IVA | 21-30 |
| **MALE** | 1 if male, 0 otherwise |
| **MORAL_TRUE** | 1 if a moral waiver was recorded by PRIDE or MIRS, 0 otherwise |
| **PAYGRADE** | 1 if entered DEP at paygrade greater than E-1, 0 otherwise |
| **MISSION_DAY** | 1 if entered on last day of month, 0 otherwise |
| **PRIOR** | 1 if entered with any prior enlisted service time, 0 otherwise |

Table 17. Logistic Regression Variable Descriptions

Age was determined by using the “date-years-difference” function in Clementine 11.1 to compare date of birth and date of DEP entry, and 73 records were removed from the dataset to account for non-prior service applicants who

were either too young or too old to meet basic enlistment eligibility criteria. The results were then broken into a five-level set called AGE for those 17-21, 22-25, 26-29, 30-34, and greater than 34.

The variable EDUC was derived into a three-level set. It was necessary to modify the status of 8,418 records that still showed a last-recorded status of "P" for high school senior to either "N" for non-graduate or "D" for diploma graduate. These individuals left DEP prior to accession for various reasons, including officer programs (106), declination of enlistment (4,602), medical issues (1,059), and failure to graduate high school (1,397). Those who left DEP due to academic ineligibility were modified to the "N" category for non-graduate. The remaining 7,021 were modified to "D" for diploma graduate.

RACE was derived by reducing 30 Department of Defense race codes into a five-level set. Twenty-five codes that represent mixed races were combined into a category for other ("O"). Also, ethnicities of Hispanic, Puerto Rican, Mexican, Cuban, and Latin American Hispanic were programmed to override any race codes to create a new race category for Hispanic ("H"). The largest change as a result of this modification was the reduction in the White classification from 63.0 percent to 51.2 percent. Finally, three race codes were combined for the category of Asian Pacific Islander or Native American ("A").

REGION was derived by dividing the 31 Navy Recruiting Districts into a four-level set with NORTH, SOUTH, CENTRAL, and WEST. Armed Forces Qualification Test (AFQT) scores were grouped according to the test score categories used by the military to determine mental eligibility. The scores required a five-level set for 21-30 (IVA), 31-49 (IIIB), 50-64 (IIIA), 65-92 (II), and 93-99 (I). A three-level set called MARITAL was derived from six unique identifiers. In order to create the set, three records for common law and two records for legal separation were changed to married ("M"), and three records for annulled were changed to single ("S"). BONUS was derived into a five-level set based on natural breaking points in the range of bonus amounts awarded (there were no bonuses given in the range between $12,000 and $40,000). Finally, in

an attempt to identify whether or not the end of month "crunch" impacts success, MISSION_DAY (last processing day of the month) was derived by identifying the applicants who entered DEP on any one of the 24 mission days encompassed by this study.

## C. LOGISTIC REGRESSION MODELS

### 1. Predicting Success from DEP Entry through First Term

#### *a. Descriptive Statistics*

The descriptive statistics for age, AFQT, and bonus amount (prior to binning) are shown in Table 18. The average applicant who entered DEP was 20 years old with an AFQT score of 62 and bonus amount of $5,927.

| STATISTIC | Mean | Min | Max | Std Dev | Median | Mode |
|---|---|---|---|---|---|---|
| AGE | 20 | 17 | 42 | 3 | 19 | 18 |
| AFQT | 62 | 29 | 99 | 18 | 60 | 35 |
| BONUS ($) | 5,927 | 0 | 50,000 | 12,088 | 3,000 | 0 |

Table 18. Descriptive Statistics of Age, AFQT, and Bonus Amount for Those Who Entered DEP

Table 19 presents a more detailed list of the descriptive statistics for all levels of the regressor variables. The nine subcategories whose members had success rates of two-thirds or greater are highlighted in bold print. Those older than 34 (82.7 percent) were the most successful age group. Other top independent success traits included married (63.7 percent), prior service (80.6 percent), Test Score Category I (66.7 percent), and $10,000 or more in bonus amount (at least 60.4 percent). NF, TEP, NPSB, and SEAL programs all had success rates greater than 70 percent. The race of Asian Pacific Islander or Native American was the most successful in its category (60.1 percent). Although some enlistees entered the DEP with education waivers as non-graduates and succeeded, the overall success rate for non-graduates ("N")

is shown to be 25.4 percent, which reflects the fact that all seniors who joined DEP, but failed to graduate were contained in this category.

| VARIABLE | Percent of Sample | Success Rate * | VARIABLE | Percent of Sample | Success Rate * |
|---|---|---|---|---|---|
| **PROG** | | | **RACE** | | |
| SG | 37.5% | 55.8% | W | 51.2% | 56.3% |
| SF | 23.3% | 53.3% | B | 17.5% | 54.2% |
| 5YO | 16.1% | 56.4% | H | 17.4% | 59.3% |
| GTEP | 7.0% | 54.2% | A | 11.1% | 61.0% |
| NF | 5.0% | **70.9%** | O | 2.9% | 55.8% |
| AEF | 3.5% | 60.4% | **AFQT** | | |
| NCSA | 2.8% | 65.0% | I | 6.3% | **66.7%** |
| TEP | 1.8% | **74.1%** | II | 36.6% | 59.9% |
| ATF | 1.4% | 64.4% | IIIA | 27.3% | 54.2% |
| JOBS | 1.1% | 56.0% | IIIB | 29.8% | 53.8% |
| NPSB | 0.4% | **81.9%** | IVA | 0.0% | 0.0% |
| SEAL | 0.2% | **72.1%** | **BONUS** | | |
| 2YO | 0.1% | 63.0% | 0 | 37.4% | 54.6% |
| **EDUC** | | | 1-5K | 35.2% | 55.9% |
| D | 93.8% | 58.4% | 6-8K | 15.8% | 60.2% |
| G | 3.1% | 46.3% | 10-12K | 4.7% | **67.9%** |
| N | 3.1% | 25.4% | 40-50K | 6.9% | 60.4% |
| **REGION** | | | **AGE** | | |
| WEST | 28.3% | 60.1% | 17-21 | 81.6% | 56.6% |
| SOUTH | 26.4% | 54.2% | 22-25 | 12.6% | 58.4% |
| NORTH | 22.7% | 56.6% | 26-29 | 3.8% | 58.7% |
| CENTRAL | 22.6% | 56.6% | 30-34 | 1.9% | 59.0% |
| **MARITAL** | | | >34 | 0.1% | **82.7%** |
| M | 1.4% | 63.7% | **MALE** | 82.9% | 58.9% |
| S | 98.4% | 56.9% | **MORAL_TRUE** | 14.1% | 52.7% |
| D | 0.2% | 54.5% | **MISSION_DAY** | 12.8% | 52.0% |
| **PAYGRADE** | 6.3% | **70.1%** | **PRIOR** | 0.8% | **80.6%** |

* Percentages of success above 66.7% are in bold.

Table 19. Descriptive Statistics of Regressor Variables for Those Who Entered DEP

### *b. Model*

Backward stepwise regression was used to create the best model for use in predicting success of applicants from the beginning of DEP through first term. The process began with all terms in the model, from which insignificant variables were iteratively eliminated. MARITAL was the only regressor removed, and the remaining 12 predictors were retained since each was shown to provide important information in the presence of all others. The

p-value for each regressor was 0.000 (except for AGE at 0.020). The coefficients, as listed in Table 20, are positive if their associated success probabilities are greater than the base case. For example, mission day enlistments have log odds 0.109 lower, meaning that those entering on mission day have decreased "odds of success" of exp(–0.109), or 0.897 (10 percent lower chance of success). Relationships between the variables are discussed in Section C.2.c of this chapter.

| Variable | Logit Coefficient |
|---|---|
| **PROG** | |
| 2YO | –0.706 |
| 5YO | –0.927 |
| AEF | –0.928 |
| ATF | –0.692 |
| GTEP | –0.979 |
| JOBS | –0.867 |
| NCSA | –0.603 |
| NF | –0.544 |
| NPSB | 0.53 |
| SEAL | –0.421 |
| SF | –0.955 |
| SG | –0.938 |
| TEP | BASE |
| **EDUC** | |
| D | 1.426 |
| G | 0.888 |
| N | BASE |
| **PRIOR** | |
| 1 | 0.708 |
| 0 | BASE |

| Variable | Logit Coefficient |
|---|---|
| **RACE** | |
| A | 0.173 |
| B | 0.043 |
| H | 0.152 |
| O | –0.007 |
| W | BASE |
| **BONUS** | |
| 0 | –0.002 |
| 1-5K | 0.047 |
| 6-8K | BASE |
| 10-12K | 0.001 |
| 40-50K | 0.128 |
| **MORAL_TRUE** | |
| 1 | -0.181 |
| 0 | BASE |
| **MISSION_DAY** | |
| 1 | -0.109 |
| 0 | BASE |
| **MALE** | |
| 1 | 0.532 |
| 0 | BASE |

| Variable | Logit Coefficient |
|---|---|
| **REGION** | |
| CENTRAL | –0.14 |
| NORTH | –0.096 |
| SOUTH | –0.199 |
| WEST | BASE |
| **AFQT** | |
| I | 4.798 |
| II | 4.681 |
| IIIA | 4.534 |
| IIIB | 4.484 |
| IVA | BASE |
| **AGE** | |
| 17-21 | 0.369 |
| 22-25 | 0.119 |
| 26-29 | 0.114 |
| 30-34 | 0.037 |
| >34 | BASE |
| **PAYGRADE** | |
| 1 | 0.458 |
| 0 | BASE |

Table 20. Regressor Coefficients Used for Predicting Success of Applicants from the Time of DEP Entry

### 2. Predicting Success of Sailors from the Time of Active Duty Accession through First Term

#### *a. Descriptive Statistics*

The descriptive statistics of age, AFQT, and bonus amount (prior to binning) are shown in Table 21. The average enlistee who finished DEP and

entered active duty was 20 years old, with an AFQT score of 62 and bonus amount of $5,922 (nearly identical to the values for the average applicant entering DEP).

| STATISTIC | Mean | Min | Max | Std Dev | Median | Mode |
|---|---|---|---|---|---|---|
| **AGE** | 20 | 17 | 42 | 3 | 19 | 18 |
| **AFQT** | 62 | 31 | 99 | 18 | 61 | 35 |
| **BONUS ($)** | 5,922 | 0 | 50,000 | 11,891 | 3,000 | 0 |

Table 21. Descriptive Statistics of Age, Armed Forces Qualification Test (AFQT), and Bonus Amount for Those Who Entered Active Duty

Table 22 presents a more detailed list of the descriptive statistics for all levels of the regressor variables. The 11 subcategories that experienced success at a rate of 80 percent or greater are highlighted in bold print. Those older than 34 (86.1 percent) were the most successful age group. Other top independent success traits included married (74.9 percent), prior service (83.9 percent), Test Score Category I (81.2 percent), and $10,000 or more in enlistment bonus amount (at least 80.3 percent). Nuclear Field (NF), Advanced Technical Field (ATF), Two Year Obligor General Details (2YO), and Sea, Air, Land (SEAL) programs all had success rates greater than 80 percent, while Non-Prior Service Basic and Training and Administration of the Reserve (TAR) Enlistment Program (TEP) each had a 99 percent success rate. The race of Asian Pacific Islander or Native American was the most successful in its category (61.0 percent).

| VARIABLE | Percent of Sample | Success Rate * | VARIABLE | Percent of Sample | Success Rate * |
|---|---|---|---|---|---|
| **PROG** | | | **RACE** | | |
| SG | 35.7% | 75.7% | W | 51.2% | 56.3% |
| SF | 24.3% | 65.7% | B | 17.6% | 54.2% |
| 5YO | 15.4% | 76.1% | H | 17.2% | 59.3% |
| GTEP | 7.8% | 62.1% | A | 11.2% | 61.0% |
| NF | 5.5% | **81.5%** | O | 2.8% | 55.8% |
| AEF | 3.5% | 77.6% | **AFQT** | | |
| NCSA | 2.9% | 79.8% | I | 6.5% | **81.2%** |
| TEP | 1.7% | **99.0%** | II | 37.0% | 76.5% |
| ATF | 1.4% | **82.2%** | IIIA | 26.7% | 71.7% |
| JOBS | 1.1% | 78.0% | IIIB | 29.9% | 69.4% |
| NPSB | 0.4% | **99.0%** | IVA | 0.0% | 0.0% |
| SEAL | 0.2% | **83.8%** | **BONUS** | | |
| 2YO | 0.1% | **85.0%** | 0 | 35.6% | 74.0% |
| **EDUC** | | | 1-5K | 36.6% | 69.4% |
| D | 95.3% | 74.0% | 6-8K | 16.1% | 76.0% |
| G | 3.0% | 61.4% | 10-12K | 5.1% | **80.6%** |
| N | 1.7% | 61.4% | 40-50K | 6.7% | **80.3%** |
| **REGION** | | | **AGE** | | |
| WEST | 28.4% | 77.2% | 17-21 | 81.3% | 73.2% |
| SOUTH | 25.9% | 71.4% | 22-25 | 12.8% | 73.9% |
| NORTH | 22.6% | 73.2% | 26-29 | 3.9% | 74.3% |
| CENTRAL | 23.2% | 71.2% | 30-34 | 1.9% | 74.3% |
| **MARITAL** | | | >34 | 0.1% | **86.1%** |
| M | 1.6% | 74.9% | **MALE** | 84.9% | 74.1% |
| S | 98.3% | 73.4% | **MORAL_TRUE** | 14.9% | 66.7% |
| D | 0.2% | 69.4% | **MISSION_DAY** | 12.0% | 73.2% |
| **PAYGRADE** | 7.2% | 79.1% | **PRIOR** | 0.9% | **83.9%** |

* Percentages of success above 80.0% are in bold.

Table 22. Descriptive Statistics of Regressor Variables for Those Who Entered Active Duty

### *b. Model*

Backward stepwise regression was used to create the best model for use in predicting the long-term success of sailors once they enter active duty. The process began with all terms in the model, from which insignificant variables were iteratively eliminated. AGE, MISSION_DAY, and MARITAL were removed, and the remaining ten predictors were retained since they were shown to provide important information in the presence of all others. The p-value for each remaining regressor was 0.000 (except for PRIOR at 0.001). The coefficients, as

listed in Table 23, are positive if their associated success probabilities are greater than the base case. Relationships between the variables are discussed in Section C.2.c of this chapter.

| Variable | Logit Coefficient |
|---|---|
| **PROG** | |
| 2YO | –3.095 |
| 5YO | –3.567 |
| AEF | –3.566 |
| ATF | –3.294 |
| GTEP | –4.139 |
| JOBS | –3.481 |
| NCSA | –3.238 |
| NF | –3.389 |
| NPSB | –0.006 |
| SEAL | –3.128 |
| SF | –3.965 |
| SG | –3.559 |
| TEP | BASE |
| **EDUC** | |
| D | 0.699 |
| G | 0.058 |
| N | BASE |

| Variable | Logit Coefficient |
|---|---|
| **RACE** | |
| A | 0.226 |
| B | 0.018 |
| H | 0.277 |
| O | –0.012 |
| W | BASE |
| **PAYGRADE** | |
| 1 | 0.192 |
| 0 | BASE |
| **PRIOR** | |
| 1 | 0.366 |
| 0 | BASE |
| **BONUS** | |
| 0 | 0.216 |
| 1-5K | 0.113 |
| 6-8K | BASE |
| 10-12K | 0.066 |
| 40-50K | 0.362 |

| Variable | Logit Coefficient |
|---|---|
| **AFQT** | |
| I | 0.414 |
| II | 0.214 |
| IIIA | 0.041 |
| IIIB | BASE |
| **MALE** | |
| 1 | 0.294 |
| 0 | BASE |
| **REGION** | |
| CENTRAL | –0.235 |
| NORTH | –0.135 |
| SOUTH | –0.211 |
| WEST | BASE |
| **MORAL_TRUE** | |
| 1 | -0.39 |
| 0 | BASE |

Table 23. Regressor Coefficients Used for Predicting Success of Applicants from the Time of Accession to Active Duty

### *c. Summary*

Higher test scores and a diploma are significant positive predictors of success. The logit coefficients for BONUS, however, are less than intuitive. In the DEP model, having a bonus under $12,000 is just slightly more positive in predicting success than not having any bonus at all. In the accession model, surprisingly, no bonus was actually a more positive predictor of success than any bonus up to $12,000. In both models, the $40,000 to $50,000 bonus range was the superior positive predictor of success. It is logical to conclude that a lot of extremely motivated, high quality recruits do not qualify for a bonus and that in the presence of all other variables, bonus amount is not always a reliable predictor of success.

In the DEP and accession models, the traits of male, prior service, advanced pay grade (above E-1), and not having a moral waiver were all shown to be significant positive predictors of success. The race categories of Hispanic and Asian Pacific Islander or Native American were also significant positive predictors of success in both models. On the other hand, mission day enlistment was a significant predictor only in the DEP model. The accession model showed that once sailors enter service, the mission day factor is no longer important in predicting success.

Interestingly, the logit coefficients in the DEP model for all AFQT levels are extremely large, due to the fact that the base is Test Score Category IV, in which there was only one member (not a success). The logit coefficients in the Accession model for NPSB and TEP were also extremely large. They were very positive predictors of success, as one might have expected based on actual success rates (as shown in Table 22). This is not particularly surprising, however, as these individuals in most cases "go back home" to affiliate with local reserve activities after completion of initial accession and skills training.

Overall, the purpose of using logistic regression is to predict success. When applied to the applicants from CYs 2003 and 2004, the accession model (73.4 percent) performed better than the DEP model (57.0 percent). The predictions made by these models, however, were on par with their respective naïve models, which would predict success for all parties based simply on percentages (greater than 50 percent) found in Tables 14 and 15. In general, predicting long-term success from the beginning of DEP through first term is much more difficult than predicting success only from the beginning of active duty.

THIS PAGE INTENTIONALLY LEFT BLANK

# VI. CONCLUSIONS AND RECOMMENDATIONS

Data comparisons showed that those who enlisted with moral waivers did better than those without moral waivers in completing DEP. This may be due to (1) recruiters spending extra time to mentor, (2) less options prior to accession and/or (3) an emotional incentive to “toe the line” for their recruiters, who “went to bat” for them in the waiver process. Although interesting, the cost of a DEP loss is assumed to be trivial compared to that of attrition from active duty, so it is success from the point of accession that should concern Navy leaders.

This study confirmed that a significant relationship exists between moral waivers and the odds of long-term success in the Navy; moral waivers are negative predictors. Further, results showed that these individuals with moral waivers are significantly tied to moral-related, post-accession attrition. Navy leaders must continuously weigh the cost of screening out more moral waivers against the real possibility of missing accession mission. The best recommendation is to screen out those with moral waivers based on characteristics shown by this study to be significant in predicting success (AFQT and education are the most practical).

THIS PAGE INTENTIONALLY LEFT BLANK

# APPENDIX A. CIVIL CHARTS [AFTER, CNRC, 2002]

| Chart A – Minor Traffic Violations | |
|---|---|
| Blocking or retarding traffic.<br>Careless driving (when not treated as reckless driving).<br>Crossing yellow line; driving left of centerline.<br>Disobeying traffic lights, signs, or signals.<br>Driving on shoulder.<br>Driving uninsured vehicle.<br>Driving with blocked vision.<br>Driving with expired plates or without plates.<br>Driving without license in possession.<br>Driving without registration or with improper registration.<br>Driving wrong way on one-way street.<br>Failure to comply with officer's directives.<br>Failure to have vehicle under control.<br>Failure to keep to right or in line.<br>Failure to signal.<br>Failure to submit report following accident.<br>Failure to yield right-of-way. | Faulty equipment (such as, defective exhaust, horn, lights, mirror, muffler, signal device, steering device, tailpipe, or windshield wipers).<br>Following too closely.<br>Improper backing; backing into intersection or highway; backing over crosswalk.<br>Improper blowing of horn.<br>Improper parking: such as restricted area, fire hydrant, double parking, overtime parking.<br>Improper passing: such as passing on right, in no-passing zone, passing parked school bus, pedestrian in crosswalk (when not treated as reckless driving).<br>Improper turn.<br>Invalid or unofficial inspection sticker; failure to display inspection sticker.<br>Leaving key in ignition.<br>License plate improperly displayed or not displayed.<br>Operating overloaded vehicle.<br>Speeding (when not treated as reckless driving).<br>Spinning wheels; improper start, zigzagging; or weaving in traffic (when not treated as reckless driving). |
| **Chart B – Minor Non-Traffic Violations/Minor Misdemeanors** | |
| Abusive language under circumstances to provoke breach of peace.<br>Carrying concealed weapon (other than firearm); possession of brass knuckles.<br>Check, worthless, making or uttering, with no intent to defraud or deceive ($100 or less).<br>Curfew violation.<br>Damaging road signs.<br>Desecration of grave.<br>Discharging firearm through carelessness. | Loitering.<br>Malicious mischief.<br>Nuisance, committing.<br>Poaching.<br>Possession of alcohol by minor.<br>Possession of cigarettes by minor.<br>Possession of indecent publications or pictures. |

| | |
|---|---|
| Disobeying summons.<br>Disorderly conduct; creating disturbance; boisterous conduct.<br>Disturbing peace.<br>Driving without a license or with suspended or revoked license.<br>Drinking in public.<br>Drunk in public; drunk and disorderly.<br>Dumping refuse near highway.<br>Failure to appear.<br>Fair/toll evasion.<br>Illegal betting or gambling; operating illegal handbook, raffle, lottery, punch board; matching cockfight.<br>Juvenile non-criminal misconduct; beyond parental control; incorrigible; runaway; truant; or wayward.<br>Liquor: unlawful manufacture, sale, possession, or consumption in public place.<br>Littering. | Probation Violation.<br>Public urination.<br>Purchase, possession, or consumption of alcoholic beverages by minor.<br>Racing, dragging, contest for speed (when not treated as reckless driving).<br>Removing property under lien.<br>Removing property from public grounds.<br>Robbing orchard.<br>Trespass to property.<br>Unlawful assembly.<br>Use of false ID to buy alcohol.<br>Using or wearing unlawful emblem.<br>Vagrancy.<br>Vandalism: injuring or defacing public property or property of another; shooting out streetlights.<br>Violation of fireworks laws.<br>Violation of fish and game laws. |
| **Chart C – Non-Minor Misdemeanors** | |
| Accessory before or after the fact of a misdemeanor.<br>Assault/Assault and battery.<br>Behind the wheel (regardless of blood alcohol content level).<br>Bigamy.<br>Breaking and entering.<br>Check, worthless, making or uttering, with intent to defraud or deceive ($500 or less).<br>Child neglect.<br>Conspiring to commit misdemeanor.<br>Contributing to delinquency of minor.<br>Criminal mischief.<br>Criminal trespass.<br>Cruelty to animals.<br>Driving while drugged or intoxicated. | Negligent homicide.<br>Prostitution.<br>Petty larceny (value $500 or less), such as, stealing hubcaps, shoplifting.<br>Possession and/or use of marijuana/controlled substance.<br>Possession of drug paraphernalia.<br>Probation violation.<br>Providing false information to police/authorities.<br>Reckless driving.<br>Resisting arrest.<br>Sex crime related charges.<br>Shooting.<br>Slander.<br>Stolen property, knowingly receiving |

| | |
|---|---|
| | (value $500 or less). |
| Failure to stop and render aid after accident. | Suffrage rights, interference with. |
| False Imprisonment. | Unlawful carrying of firearms; carrying concealed firearm. |
| Harassment. | Unlawful entry. |
| Indecent exposure. | Unlawful use of long-distance telephone lines. |
| Indecent, insulting, or obscene language communicated directly or by telephone. | Use of telephone to abuse, annoy, harass, threaten, or torment another. |
| Juvenile Delinquency involving criminal misconduct. | Using boat without owner's consent. |
| Leaving scene of accident (hit and run). | Willfully discharging firearm so as to endanger life; shooting in public place. |
| Looting. | Wrongful use of chemical substances. |
| Motor vehicles: Wrongful appropriation of motor vehicle; joyriding; driving motor vehicle without owner's consent. | |
| **Chart D – Felonies** | |
| Accessory before or after the fact of a felony. | Indecent acts or liberties with child under 16. |
| Adultery. | Indecent assault. |
| Aggravated assault; assault with dangerous weapon; assault, intentionally inflicting great bodily harm; assault with intent to commit felony. | Kidnapping; abduction. |
| Arson. | Mail matters: abstracting, destroying, obstructing, opening, secreting, stealing, or taking. |
| Attempt to commit a felony. | Mails, depositing obscene or indecent matter in. |
| Bomb threat. | Maiming; disfiguring. |
| Breaking and entering with intent to commit a felony. | Manslaughter. |
| Bribery. | Murder. |
| Burglary. | Pandering. |
| Carnal knowledge of female under 16. | Perjury; subordination of perjury. |
| Cattle rustling. | Possession and/or use of marijuana/controlled substance. |
| Car jacking. | Public record: altering, concealing, destroying, mutilating, obliterating, or removing. |
| Check, worthless, making or uttering, with intent to defraud or deceive (over $500). | Rape. |
| Child abuse. | Riot. |

| | |
|---|---|
| Concealing knowledge of a felony.<br>Conspiring to commit a felony.<br>Criminal libel.<br>Extortion.<br>Forgery; knowingly uttering or passing forged instrument.<br>Graft.<br>Grand larceny; embezzlement (value over $500).<br>Housebreaking. | Robbery.<br>Sedition; solicitation to commit sedition.<br>Selling or leasing weapons to minors.<br>Sodomy.<br>Stalking.<br>Stolen property, knowingly receiving (value over $500). |

# APPENDIX B. WAIVER CODES [AFTER, CNRC, 2002]

| 1st digit – Type of Enlistment/Program Waiver | | 2nd digit – Sub-Type for the Enlistment/Program Waiver | |
|---|---|---|---|
| Basic Enlistment Eligibility Requirements (BEERS) Age | A | Not Applicable | Y |
| BEERS Dependency | B | Military Spouse<br>Number of Dependents<br>Not Applicable | A<br>B<br>Y |
| BEERS Mental Qualifications | C | Not Applicable | Y |
| BEERS Law Violations | D | Minor Traffic Offense<br>Serious Traffic Offense<br>Minor Non-Traffic/Minor Misdemeanor<br>Serious Non-Traffic/Major Misdemeanor<br>Felony (Adult)<br>Felony (Juvenile/Youthful Offender) | A<br>B<br>C<br>D<br>E<br>F |
| Previous Military Separation – (Not DEP) | E | Reenlistment Eligibility<br>Pay Grade<br>Lost Time<br>Existed prior – physical disability<br>Skill Requirement<br>Not Applicable | A<br>B<br>C<br>D<br>E<br>Y |
| BEERS Drug Involvement (Not Law Violation) | F | Alcohol Abuse<br>Marijuana Usage<br>Other Drug Usage<br>Drug/Alcohol Test Positive | A<br>B<br>C<br>D |
| Reserved – Future Use | G | | |
| Medical/Physical Disqualification | H | Height;<br>Weight<br>Waiver condition assigned ICD9 code | A<br>B<br>C |
| Sole Survivor Member | J | Not Applicable | Y |
| Minimum Education Requirements | K | Not Applicable | Y |
| Alien | L | Not Applicable | Y |
| Security Risk | M | Not Applicable | Y |
| Conscientious Objector | N | Not Applicable | Y |
| Reserved in MIRS for Army | P | Not Applicable | Y |
| Reserved in MIRS for Air Force | Q | Not Applicable | Y |
| Navy Admin (Reserved - future use) | R | Not Applicable | Y |
| Reserved in MIRS for Marines | X | Not Applicable | Y |
| No Waiver Required | Y | Not Applicable | Y |

| **3rd digit – Level of Waiver Authority** | |
|---|---|
| Navy Department (Secretary of the Navy, etc.) | A |
| Commander, Navy Recruiting Command | B |
| Commanding Officer, Navy Recruiting Region | D |
| Commander, Navy Recruiting District | E |
| Not Applicable or NONE | Y |

THIS PAGE INTENTIONALLY LEFT BLANK

# APPENDIX C. DATA DESCRIPTIONS

**Interservice Separation Codes [From DMDC]**

| Code | Definition |
|---|---|
| 000 | Unknown or not applicable |
| 001 | Expiration of term of service |
| 002 | Early release, insufficient retainability |
| 003 | Early release, to attend school |
| 005 | Early release, in the national interest |
| 008 | Early release, other, including RIF, VSI, and SSB |
| 010 | Condition existing prior to service |
| 011 | Disability, severance pay |
| 012 | Permanent disability retirement |
| 013 | Temporary disability retirement |
| 014 | Disability, no condition existing prior to service, no severance pay |
| 016 | Unqualified for active duty, other |
| 017 | Failure to meet weight or body fat standards |
| 022 | Dependency or hardship |
| 030 | Death, battle casualty |
| 031 | Death, non-battle, disease |
| 032 | Death, non-battle, other |
| 033 | Death, cause not specified |
| 040 | Officer commissioning program |
| 042 | Military service academy |
| 050 | Retirement, 20 to 30 years of service |
| 060 | Character or behavior disorder |
| 064 | Alcoholism |
| 065 | Discreditable incidents, civilian or military |
| 067 | Drugs |
| 071 | Civil court conviction |
| 072 | Security |
| 073 | Court-martial |
| 074 | Fraudulent entry |
| 075 | AWOL or desertion |
| 076 | Homosexuality |
| 077 | Sexual perversion |
| 078 | Good of the service (discharge in lieu of court-martial) |
| 080 | Misconduct, reason unknown |
| 081 | Unfitness, reason unknown |
| 083 | Pattern of minor disciplinary infractions |
| 084 | Commission of a serious offense |
| 085 | Failure to meet minimum qualifications for retention |

| | |
|---|---|
| 086 | Unsatisfactory performance (former Expeditious Discharge Program) |
| 087 | Entry level perform and conduct (former Trainee Discharge Program) |
| 090 | Secretarial authority |
| 091 | Erroneous enlistment or induction |
| 092 | Sole surviving family member |
| 094 | Pregnancy |
| 095 | Minority (underage) |
| 096 | Conscientious objector |
| 097 | Parenthood |
| 098 | Breach of contract |
| 099 | Other |

**DMDC Independent Variables**

| | |
|---|---|
| D.DisDate | DEP discharge date |
| D.DisCode | Reason for DEP discharge |
| D.DepWvr1 | 1st enlistment waiver required before DEP entry |
| D.DepWvr2 | 2nd enlistment waiver required before DEP entry |
| D.DepWvr3 | 3rd enlistment waiver required before DEP entry |
| D.AccWvr1 | 1st enlistment waiver required during DEP |
| D.AccWvr2 | 2nd enlistment waiver required during DEP |
| D.AccWvr3 | 3rd enlistment waiver required during DEP |
| D.Srvc | Military service and component |
| D.Uic | Unit identification code |
| D.FileDate | Month of loss |
| D.LossDate | Date that service member left active duty service |
| D.IscCode | Reason for loss |

**NRD Nashville Independent Variables**

| | |
|---|---|
| N.NumA | Number of Chart A offenses |
| N.A | Civil waiver required due to Chart A offense(s) |
| N.NumB | Number of Chart A offenses |
| N.B | Civil waiver required due to Chart B offense(s) |
| N.NumC | Number of Chart A offenses |
| N.C | Civil waiver required due to Chart C offense(s) |
| N.NumD | Number of Chart A offenses |
| N.D | Civil waiver required due to Chart D offense(s) |
| N.Alc | Waiver for history of alcohol abuse |
| N.Comp | Log entry was contained in computer log only |
| N.UnkCiv | Log did not specify specific offenses requiring waiver |
| N.Hp3 | Waiver for non-graduate status |
| N.Prog | Waiver required for specific rating requested |
| N.DepDis | Waiver for number of dependents |

| | |
|---|---|
| N.Depend | Waiver for charges of physical violence |
| N.PhysViol | Waiver for drug test failure |
| N.PosDat | Waiver for exceeding debt matrix |
| N.Debt | Waiver for charges of domestic violence |

**CNRC Independent Variables**

| | |
|---|---|
| C.term | Length of contract |
| C.prog | Type of enlistment program |
| C.rate | Job field |
| C.sex | Gender |
| C.prior | Prior enlisted experience |
| C.cived | Years of education |
| C.edcert | High school education status |
| C.afqt | Armed Forces Qualification Test composite score |
| C.cancode | Cancellation code – assigned to attrites |
| C.race | Race |
| C.ethnic | Ethnicity |
| C.paygrd | Paygrade |
| C.advpay | Advance pay flag |
| C.nrd | NRD used |
| C.marital | Marital status |
| C.csmflag | HP3 waiver flag |
| C.civcode | Education level |
| C.zipcode | Zip code |
| C.bonus | Bonus flag |
| C.bonamt | Bonus amount |
| C.nidt | Non-Instrumented Drug Test flag |
| C.birthst | Birth state |
| C.depstat | DEP status flag – ACCESSED or ATTRITED |
| C.fy | Fiscal year |
| C.depw1 | 1st DEP waiver |
| C.depw2 | 2nd DEP waiver |
| C.depw3 | 3rd DEP waiver |
| C.accw1 | 1st Accession waiver |
| C.accw2 | 2nd Accession waiver |
| C.accw3 | 3rd Accession waiver |
| C.enldate | Date entered active duty |
| C.resdate | Date entered DEP |
| C.dobdate | Date of birth |
| C.srcdate | Source date – indicates month of accession |

**Flags Created for Data Comparisons**

| Data Source | Variable Name | Type of Waiver |
|---|---|---|
| CNRC | C.AFlag | Chart A |
| | C.BFlag | Chart B |
| | C.CFlag | Chart C |
| | C.DFlag | Chart D |
| | C.CivilFlag | Civil |
| | C.DrugFlag | Drug-related |
| | C.AlcFlag | Alcohol-related |
| | C.MoralFlag | Moral-related |
| DMDC | D.AFlag | Chart A |
| | D.BFlag | Chart B |
| | D.CFlag | Chart C |
| | D.DFlag | Chart D |
| | D.CivilFlag | Civil |
| | D.DrugFlag | Drug-related |
| | D.AlcFlag | Alcohol-related |
| | D.MoralFlag | Moral-related |
| NRD Nashville | N.AFlag | Chart A |
| | N.BFlag | Chart B |
| | N.CFlag | Chart C |
| | N.DFlag | Chart D |
| | N.CivilFlag | Civil |
| | N.AlcFlag | Alcohol-related |
| | N.MoralFlag | Moral-related |
| Overall | ATrueFlag | At least 1 source recorded a Chart A as the highest civil waiver |
| | BTrueFlag | Same for Chart B |
| | CTrueFlag | Same for Chart C |
| | DTrueFlag | Same for Chart D |
| | CivilTrueFlag | Civil |
| | DrugTrueFlag | Drug |
| | AlcTrueFlag | Alcohol-related |
| | MoralTrueFlag | Moral-related |
| | SUCCESS | Enlistee considered successful |

# APPENDIX D. MORAL-RELATED ATTRITION ANALYSIS

Moral Losses by ISC for Navy-Wide Accessions With Moral Waivers
(Codes With Less Than Ten Losses Not Shown)

| | ISC | Total Moral Losses | Moral Losses with Moral Waivers | % in ISC | % of TRUTH |
|---|---|---|---|---|---|
| **PRIDE** | 60 | 1667 | 146 | 8.8% | 63.2% |
| | 64 | 505 | 106 | 21.0% | 68.4% |
| | 65 | 1436 | 176 | 12.3% | 61.3% |
| | 67 | 2864 | 549 | 19.2% | 65.0% |
| | 71 | 78 | 16 | 20.5% | 69.6% |
| | 73 | 130 | 13 | 10.0% | 46.4% |
| | 74 | 2852 | 402 | 14.1% | 66.8% |
| | 75 | 224 | 24 | 10.7% | 60.0% |
| | 76 | 246 | 18 | 7.3% | 60.0% |
| | 78 | 593 | 72 | 12.1% | 62.6% |
| | 84 | 1746 | 222 | 12.7% | 64.7% |
| | 87 | 288 | 19 | 6.6% | 63.3% |
| | Total | 12772 | 1774 | 13.9% | 64.5% |
| **MIRS** | 60 | 1667 | 201 | 12.1% | 87.0% |
| | 64 | 505 | 145 | 28.7% | 93.5% |
| | 65 | 1436 | 266 | 18.5% | 92.7% |
| | 67 | 2864 | 784 | 27.4% | 92.9% |
| | 71 | 78 | 21 | 26.9% | 91.3% |
| | 73 | 130 | 26 | 20.0% | 92.9% |
| | 74 | 2852 | 547 | 19.2% | 90.9% |
| | 75 | 224 | 40 | 17.9% | 100.0% |
| | 76 | 246 | 28 | 11.4% | 93.3% |
| | 78 | 593 | 108 | 18.2% | 93.9% |
| | 84 | 1746 | 314 | 18.0% | 91.5% |
| | 87 | 288 | 26 | 9.0% | 86.7% |
| | Total | 12772 | 2529 | 19.8% | 91.9% |
| **TRUTH** | 60 | 1667 | 231 | 13.9% | 100.0% |
| | 64 | 505 | 155 | 30.7% | 100.0% |
| | 65 | 1436 | 287 | 20.0% | 100.0% |
| | 67 | 2864 | 844 | 29.5% | 100.0% |
| | 71 | 78 | 23 | 29.5% | 100.0% |
| | 73 | 130 | 28 | 21.5% | 100.0% |
| | 74 | 2852 | 602 | 21.1% | 100.0% |
| | 75 | 224 | 40 | 17.9% | 100.0% |
| | 76 | 246 | 30 | 12.2% | 100.0% |
| | 78 | 593 | 115 | 19.4% | 100.0% |
| | 84 | 1746 | 343 | 19.6% | 100.0% |
| | 87 | 288 | 30 | 10.4% | 100.0% |
| | Total | 12772 | 2751 | 21.5% | 100.0% |

Moral Losses by ISC for NRD Nashville Accessions With Civil Waivers
(Codes With Less Than Five Losses Not Shown)

| | ISC | Total Moral Losses | Moral Losses with Moral Waivers | % in ISC | % of TRUTH |
|---|---|---|---|---|---|
| **PRIDE** | 60 | 59 | 4 | 6.8% | 57.1% |
| | 64 | 20 | 5 | 25.0% | 71.4% |
| | 65 | 31 | 3 | 9.7% | 42.9% |
| | 67 | 95 | 17 | 17.9% | 63.0% |
| | 74 | 107 | 21 | 19.6% | 58.3% |
| | 78 | 29 | 4 | 13.8% | 66.7% |
| | 84 | 57 | 6 | 10.5% | 37.5% |
| | Total | 431 | 65 | 15.1% | 57.5% |
| **MIRS** | 60 | 59 | 5 | 8.5% | 71.4% |
| | 64 | 20 | 5 | 25.0% | 71.4% |
| | 65 | 31 | 4 | 12.9% | 57.1% |
| | 67 | 95 | 23 | 24.2% | 85.2% |
| | 74 | 107 | 26 | 24.3% | 72.2% |
| | 78 | 29 | 4 | 13.8% | 66.7% |
| | 84 | 57 | 12 | 21.1% | 75.0% |
| | Total | 431 | 84 | 19.5% | 74.3% |
| **Nashville** | 60 | 59 | 6 | 10.2% | 85.7% |
| | 64 | 20 | 7 | 35.0% | 100.0% |
| | 65 | 31 | 7 | 22.6% | 100.0% |
| | 67 | 95 | 25 | 26.3% | 92.6% |
| | 74 | 107 | 30 | 28.0% | 83.3% |
| | 78 | 29 | 6 | 20.7% | 100.0% |
| | 84 | 57 | 14 | 24.6% | 87.5% |
| | Total | 431 | 100 | 23.2% | 88.5% |
| **TRUTH** | 60 | 59 | 7 | 11.9% | 100.0% |
| | 64 | 20 | 7 | 35.0% | 100.0% |
| | 65 | 31 | 7 | 22.6% | 100.0% |
| | 67 | 95 | 27 | 28.4% | 100.0% |
| | 74 | 107 | 36 | 33.6% | 100.0% |
| | 78 | 29 | 6 | 20.7% | 100.0% |
| | 84 | 57 | 16 | 28.1% | 100.0% |
| | Total | 431 | 113 | 26.2% | 100.0% |

# LIST OF REFERENCES


Baczkowski, R.E., "The Effects of End-of-month Recruiting on Marine Corps Recruit Repot Attrition," Master's Thesis, Naval Postgraduate School, Monterey, California, March 2006.

Commander, Navy Recruiting Command, Navy Recruiting Command History, 7 August 2007 <http://www.cnrc.navy.mil/history.htm>.

Commander, Navy Recruiting Command, *Navy Recruiting Manual-Enlisted*, COMNAVCRUITCOMINST 1130.8F with Change 14, Millington, Tennessee, 15 August 2002.

Defense Manpower Data Center, Active Duty 700 byte Edit File Data Dictionary.

Hall, L.D., "Analyzing Success of Navy Enlistees with Moral Waivers," Master's Thesis, Naval Postgraduate School, Monterey, California, September 1999.

Montgomery, D.C., Peck, E.A., and Vining, G.G., *Introduction to Linear Regression Analysis*, 3rd Ed., John Wiley & Sons, Inc., 2003.

Navy Recruiting District Nashville, *Waiver Log*, 2002.

Noble, J.L., "Navy Recruits with Moral Waivers," Accessions Research Conference, Navy Support Training Center, Great Lakes, Illinois, August 2005.

Putka, D.J., Noble, C.L., Becker, D.E., and Ramsberger, P.F., "Evaluating Moral Character Waiver Policy Against Servicemember Attrition and In-Service Deviance Through the First 18 Months of Service," Human Resources Research Organization, Alexandria, Virginia, January 2004.

United States General Accounting Office, "Military Recruiting: New Initiatives Could Improve Criminal History Screening," GAO/NSIAD-99-53, Washington, D.C., February 1999.

THIS PAGE INTENTIONALLY LEFT BLANK

# INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
   Ft. Belvoir, Virginia

2. Dudley Knox Library
   Naval Postgraduate School
   Monterey, California

3. Professor Samuel E. Buttrey
   Naval Postgraduate School
   Monterey, California

4. CDR David L. Schiffman
   Naval Postgraduate School
   Monterey, California

5. Mr. John Noble
   Navy Recruiting Command
   Millington, Tennessee

6. CDR Voresa E. Booker
   Navy Recruiting District Nashville
   Nashville, Tennessee

7. Al Clark
   Navy Recruiting District Nashville
   Nashville, Tennessee

8. LT Don Britton
   Naval Postgraduate School
   Monterey, California

9. Richard Moreno
   Defense Manpower Data Center
   Seaside, California

10. LT Richard Huth
    Atoka, Tennessee